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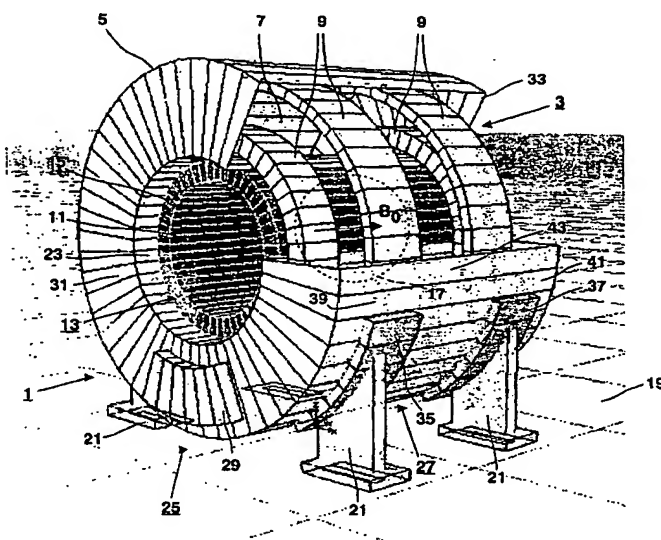
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(54) Title: AN MRI SYSTEM WITH A CONDUCTIVE MEMBER HAVING A DAMPING EFFECT FOR VIBRATIONS



(57) Abstract: The invention relates to a magnetic resonance imaging (MRI) system (1) comprising an examination volume (11) in which a patient to be examined can be accommodated, a main magnet system (3) for generating a magnetic field having a main field portion (17) in the examination volume with a substantially constant magnetic field strength ( $B_0$ ), and a gradient magnet system (13) for generating gradients of the main field portion. The MRI system further comprises a damping member (25, 27) which is mounted to a part (5) of the MRI system susceptible to vibrations relative to the magnetic field during operation. Said damping member comprises an electrically conductive member (29, 35, 37) which is present in the magnetic field and in which eddy currents are generated as a result of said vibrations. According to the invention, the conductive member (29, 35, 37) is arranged in a secondary portion of the magnetic field at a distance from the main field portion (17), which

secondary portion has a magnetic field strength which differs by more than 25% from the magnetic field strength ( $B_0$ ) of the main field portion. In this manner, the distance between the conductive member and the main field portion is sufficiently large to prevent the eddy currents in the conductive member from causing unacceptable distortions of the main field portion, while, on the other hand, the magnetic field strength in said secondary portion is still sufficiently large to provide an adequate damping effect of the damping member (25, 27). The damping member (25, 27) can for example be mounted to a housing (5) of the main magnet system (3). Alternatively, the damping member (139, 141) can be mounted to the gradient magnet system (127). In another embodiment the damping member (27) is mounted to a rigid portion of the MRI system (1), for example to the supporting member (21), which does hardly vibrate during operation. In this embodiment, the damping member (27) is used to damp the vibrations of the magnetic field generating portions (9) of the main magnet system (3).